

## **The Diabetes Epidemic: Preventing the Preventable**

**Elizabeth Venditti, Ph.D.,**

Director, Lifestyle Resource Core for the Diabetes Prevention Program/Diabetes Prevention Program Outcomes Study, University of Pittsburgh Medical Center, Assistant Professor of Psychiatry, Department of Behavioral Medicine, University of Pittsburgh

**James Desemone, MD, FACE**

Director, Goodman Diabetes Service - Division of Endocrinology and Metabolism, Albany Medical Center

## **Sponsored By**

- **Diabetes Prevention Program, NYS Department of Health**
- **School of Public Health, University at Albany**

## **Viewer Call-In**

**Phone: 800-452-0662**

**Fax: 518-426-0696**

## **Evaluations**

**Please fill out and return your evaluations to the School of Public Health Continuing Education. Your feedback is invaluable to this program.**

*Thank you!*

**New York State Department of Health  
Diabetes Prevention and Control  
Program**

**518-474-1222**

**<http://www.health.state.ny.us/nysdoh/consumer/diabetes/condiab.htm>**

**School of Public Health  
Continuing Education**

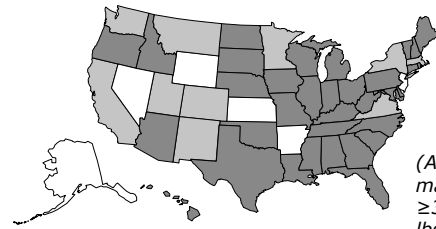
**For more information please contact us  
or log on to our website.**

**518-402-0330**

**[www.albany.edu/sph/coned](http://www.albany.edu/sph/coned)**



## Obesity Trends\* Among U.S. Adults BRFSS, 1990

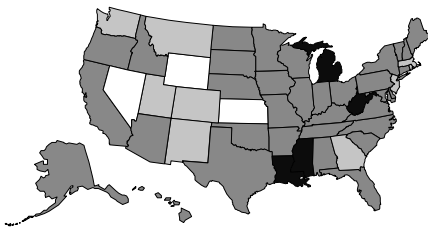


(All obesity maps: \*BMI  $\geq 30$ , or  $\sim 30$  lbs overweight for 5' 4" woman)

☐ No Data 
 ☐ <10% 
 ☐ 10%-14%



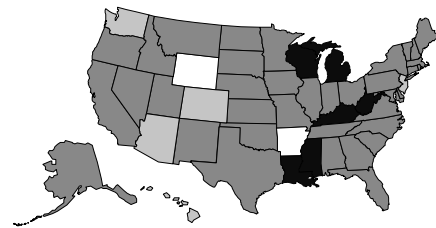
## Obesity Trends\* Among U.S. Adults BRFSS, 1991



☐ No Data 
 ☐ <10% 
 ☐ 10%-14% 
 ☐ 15%-19%



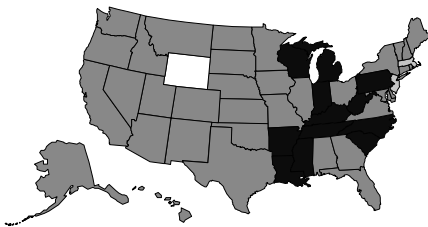
## Obesity Trends\* Among U.S. Adults BRFSS, 1992



☐ No Data 
 ☐ <10% 
 ☐ 10%-14% 
 ☐ 15%-19%



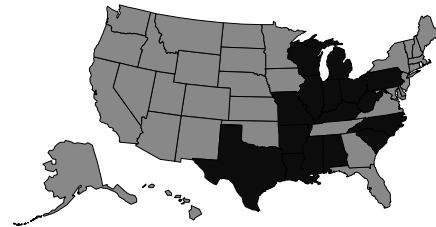
## Obesity Trends\* Among U.S. Adults BRFSS, 1993



☐ No Data 
 ☐ <10% 
 ☐ 10%-14% 
 ☐ 15%-19%



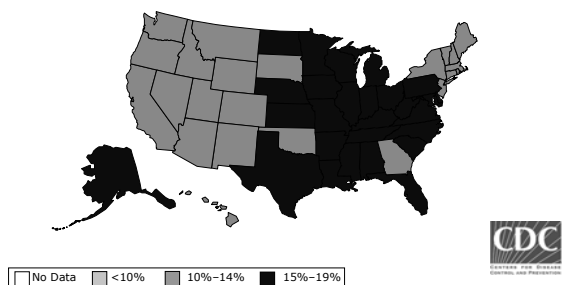
## Obesity Trends\* Among U.S. Adults BRFSS, 1994



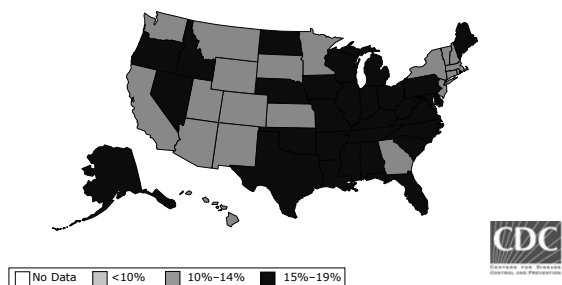
☐ No Data 
 ☐ <10% 
 ☐ 10%-14% 
 ☐ 15%-19%



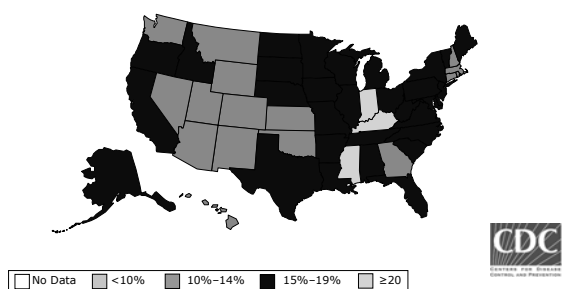
### Obesity Trends\* Among U.S. Adults BRFSS, 1995



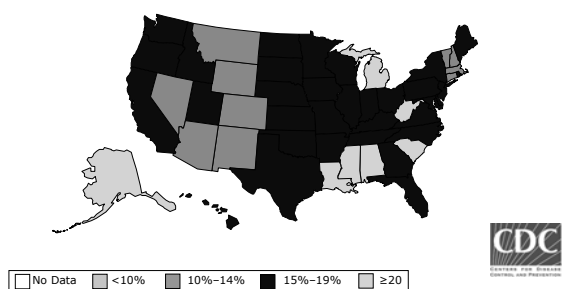
### Obesity Trends\* Among U.S. Adults BRFSS, 1996



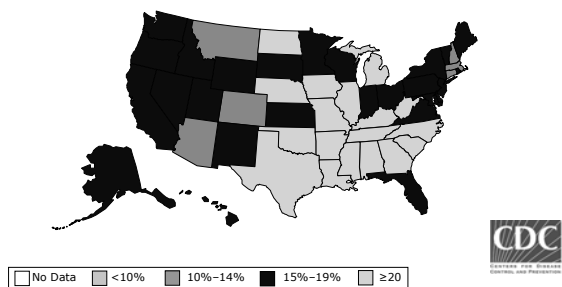
### Obesity Trends\* Among U.S. Adults BRFSS, 1997



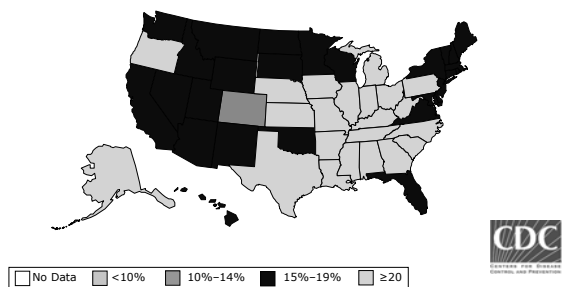
### Obesity Trends\* Among U.S. Adults BRFSS, 1998



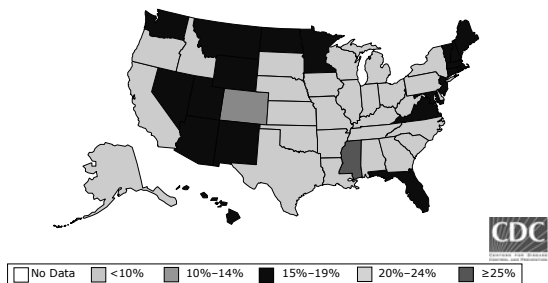
### Obesity Trends\* Among U.S. Adults BRFSS, 1999



### Obesity Trends\* Among U.S. Adults BRFSS, 2000

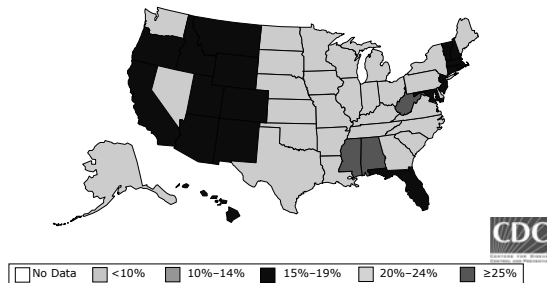


## Obesity Trends\* Among U.S. Adults BRFSS, 2001



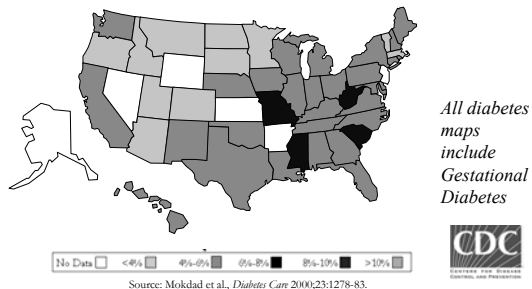
## Obesity Trends\* Among U.S. Adults BRFSS, 2002

(\*BMI ≥30, or ~30 lbs overweight for 5'4" person)



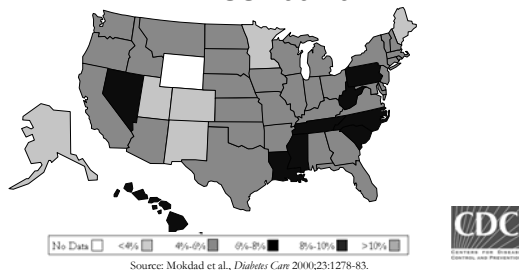
Source: Behavioral Risk Factor Surveillance System, CDC

## Diabetes Trends\* Among Adults in the U.S., BRFSS 1990



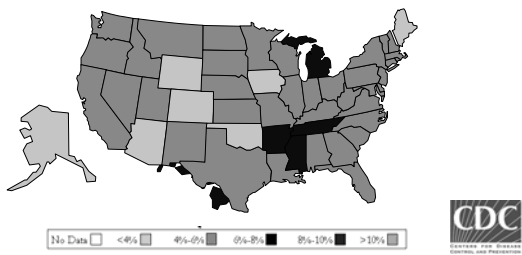
Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.

## Diabetes Trends\* Among Adults in the U.S., BRFSS 1991-92



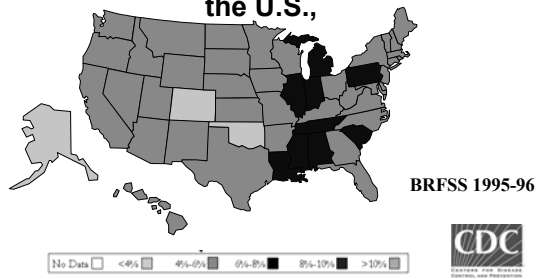
Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.

## Diabetes Trends\* Among Adults in the U.S., BRFSS 1993-94



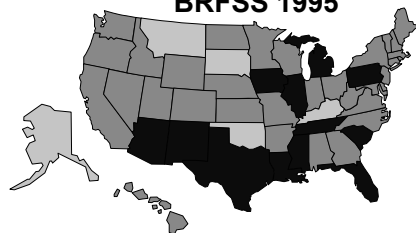
Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.

## Diabetes Trends\* Among Adults in the U.S.,



Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.

### Diabetes Trends\* Among Adults in the U.S., BRFSS 1995

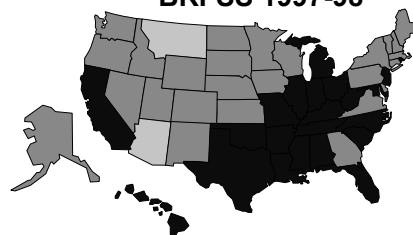


No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10% ☐

Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.



### Diabetes Trends\* Among Adults in the U.S., BRFSS 1997-98

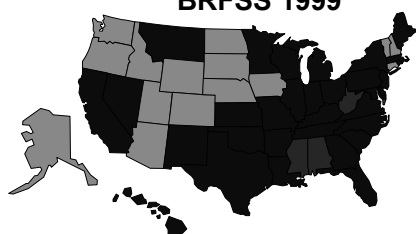


No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10% ☐

Source: Mokdad et al., *Diabetes Care* 2000;23:1278-83.



### Diabetes Trends\* Among Adults in the U.S., BRFSS 1999

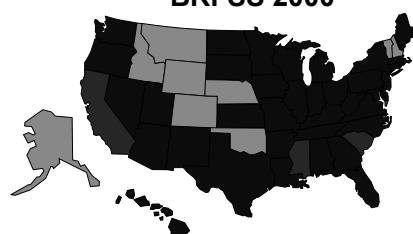


No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10% ☐

Source: Mokdad et al., *Diabetes Care* 2001;24:412.



### Diabetes Trends\* Among Adults in the U.S., BRFSS 2000

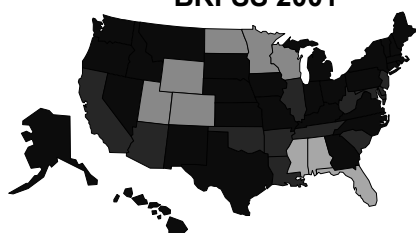


No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10% ☐

Source: Mokdad et al., *J Am Med Assoc* 2001;286:10.



### Diabetes Trends\* Among Adults in the U.S., BRFSS 2001



No Data ☐ <4% ☐ 4%-6% ☐ 6%-8% ☐ 8%-10% ☐ >10% ☐

Source: Mokdad et al., *J Am Med Assoc* 2001;286:10.



## Complications of Diabetes

Leading cause of ...

- New cases of blindness in adults
- Kidney failure
- Lower limb amputations

## Diabetes Means Increased Risk

- 2 x risk for hypertension
- 2-4 x risk for heart disease
- 2-4 x risk for stroke
- Increased risk for neuropathy (60-70% of people with diabetes)
- Dental disease
- Complications of pregnancy

## Cost of Diabetes in the United States



Total (direct and indirect)	\$132.0 B
Direct medical cost	\$91.8 B
Indirect costs	\$39.8 B
disability, work loss, premature mortality	

<http://www.diabetes.org> (April 13, 2003)

## Chronic Complications of Type 2 Diabetes Mellitus

Accounts for 25% of the Medicare Budget



Rubin RJ, et al. *J Clin Endocrinol Metab* 78:809A-809F (1994)

## Preventing Complications of Diabetes



- Diabetes Control and Complications Trial – DCCT



- United Kingdom Prospective Diabetes Study – UKPDS

**Albany Medical Center**  
Goodman Diabetes Service Outpatient Flow Sheet

Form with fields for Patient Name, Date, and various medical history and lab results sections.

Section	Field	Value
Diabetes Control	Previous Blood Sugar Log	
	HemoglobinA1c (yearly)	
	Complications Monitoring	
	Diabetic Eye Exam (yearly)	
Education Issues	Diabetes Education Referral (yearly)	
	Nutrition Counseling Referral (yearly)	
	Smoking Counseling	
	Alcohol/Pregnancy Counseling	
Labs	Cholesterol	
	Hemoglobin A <sub>1c</sub> (3-6 months)	
	HemoglobinA1c (yearly)	
	BUN/Creatinine (yearly)	
	Lipid Panel (yearly)	
	Uric Acid (yearly)	
	Triglycerides (yearly)	
	HDL (yearly)	
	LDL (yearly)	
	ALT/AST (yearly if Type 1)	
Thyroid Function Tests	TSH (yearly)	
	T4 (if indicated)	

Shoes and Socks...  
take 'em off!



If you have diabetes,  
we will check your feet.

Si usted tiene diabetes,  
remuévase sus medias  
y zapatos...



Sus pies les serán  
examinados!

## Risk Factors for Type 2 Diabetes

- Age (45 and over)
- Overweight/obesity (weight for height-BMI)
- Family history (immediate)
- Physical inactivity
- Race/ethnicity
- Body fat distribution

## Risk Factors for Type 2 Diabetes

- Elevated fasting glucose level
- Elevated 2 hour postprandial glucose level
- Hypertension
- Hypercholesterolemia
- History of gestational diabetes

## Lifestyle Changes that Promote Sedentary Behavior



## Pre-Diabetes or Diabetes?

### Fasting Plasma Glucose Test

Less than 100 mg/dl	100-125 mg/dl	126 mg/dl or higher
------------------------	------------------	------------------------

### Oral Glucose Tolerance Test

Less than 140 mg/dl	140-199 mg/dl
------------------------	------------------



**Diabetes Prevention Program**

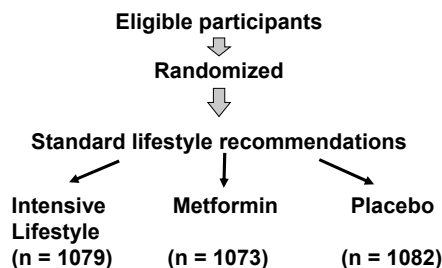
## DPP Primary Goal

**To prevent or delay the development of type 2 diabetes in persons with impaired glucose tolerance (IGT)**

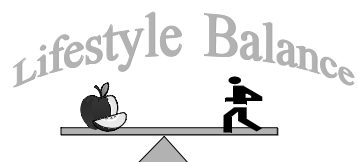
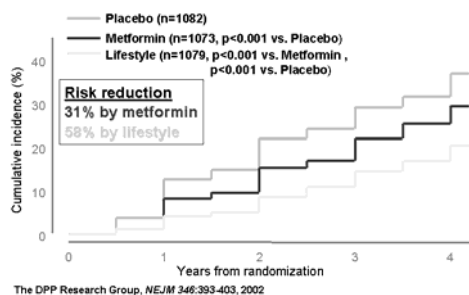
## Diabetes Prevention Program Clinics



## Study Interventions



## Incidence of Diabetes



## DPP Study Documents Website

[www.bsc.gwu.edu/dpp/index.htmlvdoc](http://www.bsc.gwu.edu/dpp/index.htmlvdoc)

## Prevention Team/ Community Resources

- Office and health network resources –RD, MSW, CDEs, etc.
- Hospital outpatient clinics
- Weight management programs
- Cardiac rehab/prevention programs
- Walking programs

## Prevention Team/ Community Resources, cont'd

- Dietetic/Diabetes/Adult continuing education programs
- Faith based/health ministries
- Chambers of Commerce/Parks and Recreation/civic associations
- Local public health efforts
- Health plans





[www.ndep.nih.gov/campaigns/SmallSteps/SmallSteps\\_index.htm](http://www.ndep.nih.gov/campaigns/SmallSteps/SmallSteps_index.htm)

## Patient Handouts for Health Care Providers

### Food and Activity Tracker

The first handout, 'DAILY FOOD AND DRINK TRACKER', has columns for 'DATE', 'FOOD AND DRINK CONSUMPTION', 'CALORIES', and 'COMMENTS'. The second handout, 'DAILY PHYSICAL ACTIVITY', has columns for 'DATE', 'TYPE OF ACTIVITY', 'DURATION', and 'COMMENTS'. Both include a 'TOTAL' row at the bottom.

Albany Medical Center  
Diabetes Self-Management Goals

Name: \_\_\_\_\_ Date: \_\_\_\_\_

☒ 1. I will test my blood sugar 3 times a day/week before, after, or after meals.

☐ 2. I will eat less/more and less/more.

☒ 3. I will watch the Buffalo Bills Daily.

☐ 4. I will make an appointment with the eye doctor for a dilated eye exam.

☒ 5. I will become more active. 20 Walking.

☐ 6. I will change my medication.

☐ 7. I will stop smoking on \_\_\_\_\_.

☐ 8. \_\_\_\_\_.

Signature: J.M. Sweet

Evaluation (Date: \_\_\_\_\_)

I met goal # \_\_\_\_\_ Always Usually Sometimes Never  
I met goal # \_\_\_\_\_ Always Usually Sometimes Never  
I met goal # \_\_\_\_\_ Always Usually Sometimes Never

## Collaborative Goal Setting

- Specific
- Measurable
- Mutually-defined
- Patient-centered

## Call to Action!!

Find it  
Treat it  
Stay with it



New York State Department of Health  
Diabetes Prevention and Control Program

**518-474-1222**

<http://www.health.state.ny.us/nysdoh/consumer/diabetes/condiab.htm>

## School of Public Health Continuing Education

For more information please contact us  
or log on to our website.

**518-402-0330**

[www.albany.edu/sph/coned](http://www.albany.edu/sph/coned)